

REMARKS

Upon entry of this Amendment, claims 1-14 are all the claims pending in the application. Claims 12-14 have been added. Claims 1-11 presently stand rejected.

The Drawings filed March 1, 2002 have been accepted by the Examiner.

Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A) in view of Sakai et al. (6,005,869) and Fredrickson (5,757,826).

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A), Sakai et al. (6,005,869) and Fredrickson (5,757,826), and further in view of Iwamoto et al. (6,611,652).

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A), Sakai et al. (6,005,869) and Fredrickson (5,757,826), and further in view of Butler et al. (5,654,654).

Claims 4 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A), Sakai et al. (6,005,869) and Butler et al. (4,654,654).

Claims 5 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A) in view of Fredrickson (5,757,826) and Butler et al. (4,654,654).

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A) in view of Sakai et al. (6,005,869), Fredrickson (5,757,826) and Butler et al. (4,654,654).

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Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A) in view of Sakai et al. (6,005,869), Fredrickson (5,757,826), Butler et al. (4,654,654) and Sitterley (6,275,966).

Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A) in view of Sakai et al. (6,005,869), Butler et al. (4,654,654) and Sitterley (6,275,966).

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Iseya (JP 63246049A) in view of Fredrickson (5,757,826), Butler et al. (4,654,654) and Sitterley (6,275,966).

For the reasons set forth below, Applicant respectfully traverses the rejections and requests favorable disposition of the application.

Argument

As clearly disclosed in the present specification, one objective of the present invention is to avoid inefficient use of communications bandwidth when transmitting blocked, e.g., packetized, data. That is, in certain communications systems, data that is arranged in blocks of unit data, or packets, is separated into individual blocks (“deblocked”) and transmitted over a communications channel. When the deblocked unit data is received, the blocks are put together again (“blocked”) to reform the original data. When the individual blocks of unit data are transmitted separately, however, there exists a risk that certain blocks of data will be lost or the data within the block will otherwise be corrupted. Accordingly, identification (ID) data and error

correction code (ECC) data are typically added to each transmitted block of unit data in order to determine if a data block has been lost and/or if data within a block has been corrupted.

As discussed in the background section of the specification, prior art methods such as the method disclosed in asserted prior art reference, Iseya, inefficiently use bandwidth because they add both the ID data *and* the ECC data to the unit data as separate data fields. (see, for example, Iseya, Figs. 3 and 4).

In accordance with the present invention, however, this inefficiency is avoided by calculating the ECC data based on the unit data with the ID data already added thereto and then adding the ECC data to the unit data while stripping the ID data from the unit data. Accordingly, when the data block is transmitted, only the unit data and the ECC data, which takes into account both the unit data and the ID data, is actually transmitted, thus saving bandwidth when compared to systems that send both the ID and the ECC data as separate data fields.

When the unit data with ECC data attached is received by the receiving unit, the ECC data is separated from the unit data and an expected ID is attached to the unit data. An expected ECC is then calculated using the combined unit data and ID data and the expected ECC data is compared to the received ECC data that was separated from the received data block upon reception. If the two ECCs match, the unit data is blocked, i.e., combined with previously received data to reform the original data.

In accordance with the present invention, described above and in the present specification, independent claim 1 recites, *inter alia*, “calculating an ECC for a data sequence having an ID added corresponding to each piece of unit data in the sending unit”. That is, as

described above and, for example, at paragraph [0028] of the published application (US 2002/0124220), ECC data is calculated in the sending unit “for a data sequence containing unit data and the ID” data. In Iseya, unlike the present invention and contrary to the Examiner’s assertion on page 2, paragraph 3, of the office action, the ECC calculated for the unit data is based solely on the unit data and is not calculated for a sequence of data that includes both unit data and ID data. Accordingly, Iseya does not meet this requirement of claim 1. Furthermore, since none of the other cited references compensate for this deficiency in Iseya, the proposed combination of references neither teach or suggest all of the recited features of claim 1. For at least this reason, Applicant respectfully requests that the rejection of claim 1, and claim 2 which depends from claim 1, be withdrawn.

In regard to independent claims 3-11, for similar reasons to those discussed above in regard to claim 1, Applicant submits that the proposed combination of references fails to teach or suggest at least, “an ECC-generating circuit for generating an ECC for the data sequence *having the unit data and the ID*”. Specifically, as discussed above, contrary to the arguments presented in the grounds of rejection, Iseya does not disclose a sending unit that generates an ECC based on a sequence of data that includes both the unit data and the ID data. In Iseya, the ECC is determined based on the unit data only and both the ECC and the ID are both attached to the unit data before sending. Similarly, with respect to the receive unit in claims 3, 5, 6, 8, 9 and 11, as discussed above, when receive data is received, an expected ID is attached thereto before the ECC-calculating circuit calculates an expected ECC. None of the prior art references cited teach

or suggest this feature either. For at least these reasons, Applicant respectfully requests that the rejection of claims 3-11 be withdrawn.

In addition to the reasons set forth above, Applicant also submits that even if the cited prior art reference to Iseya did disclose that which is asserted by the Examiner, which it does not, for the reasons above, it would not have been obvious to one of ordinary skill in the art to combine the independent teachings of Iseya with at least those of Sakai, as proposed by the Examiner. Specifically, Sakai is directed to a communications network including a single master station and a plurality of slave stations which communicate with the master station. According to the thirtieth aspect of the invention, i.e., the aspect referenced by the Examiner and disclosed at column 8, lines 1-22, the master station and each slave station is provided with ID information that identifies the respective station on the network.

According to the referenced aspect, the master station first assigns a band on the network in response to a request from a station and then transfers a token packet including the ID information for each station that requested the bandwidth in order to reserve a transmission bandwidth requested by that station. Each station then transfers a data packet by using the transmission band reserved by the token packet, wherein the data packet transferred at this stage by each station “includes no ID information.”

The Examiner concludes, for example, at page 3 of the office action, that it would have been obvious to modify the method disclosed in Iseya, i.e., wherein individual units of data are transmitted with both ID data and ECC data attached thereto, with the apparent teaching in Sakai, i.e., wherein data packets are sent with no ID information, “because one of ordinary skill

in the art would have recognized that the sending unit not including ID in the send data would provide the opportunity to increase the information data transmission density over the transmission medium and prevent unwanted transmission overhead.” This argument fails, however, for at least two reasons.

First, the ID information disclosed in Sakai, and ultimately not sent in the response data packets from each station, is ID information that identifies the individual station and does not identify the packet itself. In comparison, as disclosed in the background section of the present application, i.e., at par. [0003] of published application US 2002/0124220, the ID information disclosed in Iseya is added to “each unit of data to be sent”. That is, the ID data in Sakai identifies the station sending the data sequence and the ID information in Iseya identifies each individual unit of data that comprises the data sequence sent and is used to ensure that each unit of data is properly reconstructed with other units of data when it is received. Merely avoiding sending identification information that identifies the sending station of data is not the same as avoiding an explicit ID data field for each unit of data sent and, accordingly, a skilled artisan with the method of Sakai before him would not have been motivated to modify the method of Iseya. This argument is strengthened by the recognition that in accordance with the present invention, the ID information for each unit of data *is* actually sent with each data unit. That is, as described above, although the ID data is not sent as an explicit data field in accordance with the invention, the ID data itself is coded within the ECC since the ECC is calculated using the unit data with the ID data attached.

Secondly, the Examiner asserts that a skilled artisan would have recognized that not sending the ID data in the send data of Iseya, as allegedly taught by the modification in Sakai, “would provide an opportunity to increase the information data transmission density over the transmission medium and prevent unwanted transmission overhead.” The Examiner’s assertion, however, is contrary to the specific teachings of the prior art references. There is simply no disclosure in the prior art references cited, and the Examiner points to none specifically, that would motivate one of ordinary skill in the art to eliminate the ID information disclosed in Iseya, that identifies a corresponding unit of data, either to increase information data transmission density or otherwise.

Accordingly, Applicant submits that the proposed combination of references, at least with respect to Iseya and Sakai, which are combined to reject claims 1-11, would not have been obvious to one of ordinary skill in the art and that for this additional reason, the rejection of claims 1-11 should be withdrawn.

Patentability of New Claims

For additional claim coverage merited by the scope of the invention, Applicant has added new claims 12-14. Applicant submits that the prior art does not disclose, teach, or otherwise suggest the combination of features contained therein. For example, similar to the discussion above, none of the prior art references teach or otherwise suggest generating an ECC based on both unit data as well as ID data. Support for the subject matter recited in new claims 12-14 is found in at least paragraphs [0041 - 0042] of published application US 2002/0124220.

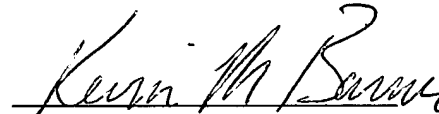
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Conclusion

In view of the foregoing remarks, the application is believed to be in form for immediate allowance with claims 1-14, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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